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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/520,417 | 01/06/2005 | Ryuichiro Kanatani | 01197.0245 | 5262 |

22852 7590 04/11/2006

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| EXAMINER |
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CHU, JOHN S Y

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| ART UNIT | PAPER NUMBER |
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1752

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/520,417

Applicant(s)

KANATANI ET AL.

Examiner

John S. Chu

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to the application filed January 6, 2005 and to the telephone conversation on March 29, 2006.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over MAEDA et al (5,025,088) in view of RUSHKIN et al (6,929,891).

The claimed invention is drawn to the following:

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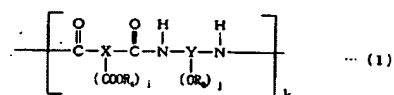
1. A negative type photosensitive resin composition which comprises:

(A) a polyamide having a structural unit represented by the following formula (1) and having a photopolymerizable unsaturated double bond: 100 parts by mass,

(B) a monomer having a photopolymerizable unsaturated double bond: 1-50 parts by mass,

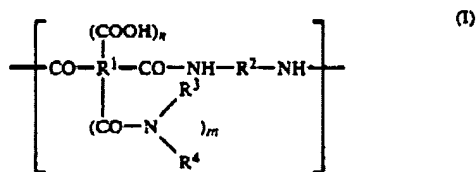
(C) a photopolymerization initiator: 1-20 parts by mass, and

(D) a melamine resin: 5-30 parts by mass,



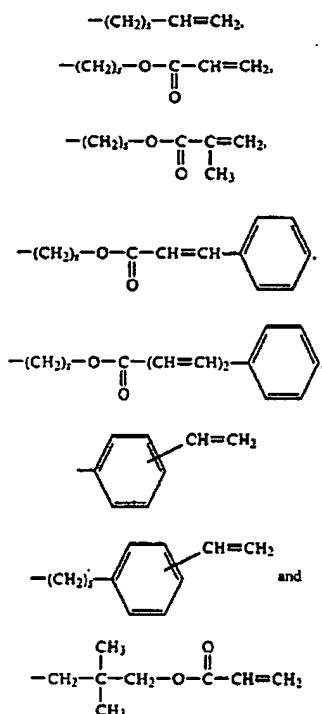
(where X is a 2-4 valent aromatic group and Y is a 2-4 valent aromatic group, i and j are integers of 0-2 and satisfy i + j = 2, k is an integer of 2-150, R_A is independently a monovalent organic group having a photopolymerizable unsaturated double bond and represented by the following formula (2) or a saturated aliphatic group of 1-4 carbon atoms, and R_B is independently a hydrogen atom or a monovalent organic group having a photopolymerizable unsaturated double bond and represented by the following formula (3), with the proviso that when the total mol number of R_B is assumed to be 100 mol%, not less than 10 mol% and not

MAEDA et al discloses a photosensitive heat-resistant resin with the following structure:



The defined R³ and R⁴ groups are defined as the following:

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Examples of R³ are as follows:

which are unsaturated side groups to the polyamide resin.

The photoinitiator and carbon-carbon double bonded compounds used as the photosensitive ingredients can be used in combination with a diazide compound and are found in column 13, lines 1-43. Applicants are additionally directed to column 13, lines 44-50 wherein secondary materials to include crosslinking agents are disclosed to be successfully used in the composition.

MAEDA et al lacks an explicit disclosure with a working example comprising a crosslinking agent and a melamine.

However RUSHKIN et al is cited to disclose that melamine crosslinking agents are known to be used in compositions comprising a polyamic acid/polybenzoxazole resin, see column 15, lines 1-20 for suitable crosslinkers.

It would have been *prima facie* obvious to one of ordinary skill in the art of negative working heat-resistant composition comprising polyamic acid to use known crosslinkers such as

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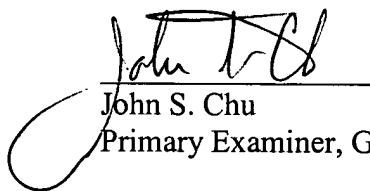
melamine in the composition as disclosed in MAEDA et al with the reasonable expectation of same or similar results for storage stability and heat resistance.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Cynthia Kelly, can be reached on (571) 272-1526

The fax phone number for the USPTO is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John S. Chu
Primary Examiner, Group 1700

J.Chu
March 29, 2006